SECTION 01610

ASSET MANAGEMENT

PART 1 GENERAL

1.1 DESCRIPTION

A. This Section specifies the requirements for asset management activities during construction including the delivery of asset information to the Owner and installation of asset tags.

1.2 RELATED SECTIONS

A. 01300 Submittals

B. 01700 Closeout

1.3 GLOSSARY OF TERMS

A. Asset – A tangible entity, or system of entities, that are tracked in an inventory and maintained in a state of good repair throughout the asset lifecycle through corrective and preventative maintenance and inspection programs. An asset has a useful life of over 1 year and will be tracked to ensure its useful life does not expire.

B. Asset Management – MBTA's management system to assure that its assets are maintained in a state of good repair throughout the asset lifecycle through corrective and preventive maintenance and inspection programs. Each asset is tracked in an information system to assure it is performing its intended function and is replaced as needed at the end of its useful life.

C. Asset data and information – The information about each asset needed and used by the MBTA to manage the asset throughout the asset lifecycle.

D. Asset Data Information Spreadsheet (ADIS) – A spreadsheet-based template used by the MBTA to collect the required data and information for assets acquired through capital projects and other procurement methods.

E. Asset Identifier (Asset ID) – A unique alphanumeric string, developed according to the MBTA Asset Naming Convention Standard, used to identify each asset owned and operated by the MBTA.

1.4 REFERENCES

A. MBTA Asset Data Information Spreadsheet (ADIS) (See Appendix, End of this Section)

1. ADIS – Facilities

2. ADIS – Power

3. ADIS – Track

4. ADIS – Signals

5. ADIS - Structures

B. MBTA Asset Definition and Data Dictionary (AD4)

1. MBTA Facilities AD4

2. MBTA Power AD4

3. MBTA Track AD4

4. MBTA Signals AD4

5. MBTA Structures AD4

C. MBTA Asset Naming Convention Standard

D. MBTA Asset Tagging Standard

1.5   ASSET INFORMATION DELIVERY

A. Contractor shall provide records, documentation, and compiled asset data and information for all assets procured, constructed, installed or in any way altered in form or condition by the Work. The required information for each asset shall be as specified in the Asset Data Information Spreadsheets (ADIS) included in the Contract Documents. Asset information shall be collected and documented on a continuous basis as it becomes available to the Contractor, including but not limited to information associated with the Contractor's purchase, delivery, installation, startup, testing, and inspection of assets.

B. Contractor shall identify dedicated personnel to be responsible for the collection, organization, and submission of asset information. Dedicated personnel shall be responsible for coordinating with the Owner to identify and correct errors, omissions, and or delayed asset information submittals.

C. Contractor shall develop and apply an Asset Information Management Plan that acknowledges the asset management requirements associated to the Work and outlines the Contractor's approach to fulfill asset management requirements defined in the Contract Documents. The plan shall include:

1. Acknowledgement of receipt of applicable asset management references including project ADIS and MBTA Asset Tagging Standard.

2. Confirmation of scope of asset management required by the Contract including asset information to be collected and submitted, and the list of assets requiring asset tags.

3. Methodology to collect, organize, and report asset information to the Owner.

4. Designated project personnel involved in asset management and their responsibilities.

5. Strategy to collect asset information from Contractor's partnered subcontractors, suppliers, and manufacturers.

6. Quality assurance methodology that will be practiced to ensure the accuracy of submitted asset information.

7. Protocol and procedures to accommodate project changes that may affect asset information or asset information delivery including but not limited to replacing project personnel, changes in type or quantity of assets, or improvements to information collection methodology.

8. Planned delivery methodology of asset information to the Owner,

including tools, systems, and frequency.

9. Methodology to fulfill asset tagging requirements of the Contract.

1.6   ASSET TAGGING

A. Contractor shall install permanently affixed identification tags on assets as required by the Contract Documents and ADIS as part of the construction of each asset. Asset tags shall be formatted, furnished, and installed as directed by requirements set forth in the MBTA Asset Tagging Standard.

B. Contractor shall utilize means of designing and printing asset tags that will enable the accurate generation and reading of QR codes included on each asset tag.

C. Asset tags shall be manufactured and installed using materials and methods that meet the durability and longevity requirements of the MBTA Asset Tagging Standard.

D. Contractor shall coordinate with the Owner as to the content that shall be included on each asset tag, in accordance with the MBTA Asset Tagging Standard.

E. Contractor shall coordinate the installation of asset tags with asset delivery, installation, and startup as required to ensure asset tags are installed prior to the asset's entry into service. Contractor shall document the installation of asset tags in field with progress photographs submitted to the Owner.

F. Contractor may coordinate with equipment manufacturers to provide required asset tag content within permanent asset nameplates required by other sections of this Contract, provided that the content on nameplates meet dimensional, functional, and visual accessibility requirements of the MBTA Asset Tagging Standard.

1.7   SUBMITTALS

A. Within 60 days of NTP, Contractor shall submit an Asset Information Management Plan.

1. Subsequent submissions of the Asset Information Plan are required in response to Owner's direction or in response to changing project conditions.

B. Asset Information shall be submitted monthly, in the form of a draft ADIS, packaged with the asset data available to the Contractor at the time of submission. Previously submitted asset data and information shall be maintained in subsequent submissions of the draft ADIS. Corrections or updates to previously submitted information, or newly provided information, shall be clearly identified on the submitted draft ADIS.

C. Contractor shall include relevant Asset IDs when submitting all documentation, submittals, reports, and RFIs to the Owner that pertain to the assets identified within the ADIS.

D. Asset Tags

1. Drawings: Submit set of PDF drawings for all asset tags indicating tag layout, material, dimensions, content, and attachment methods to various

asset substrates. This package of drawings shall include all detail and context necessary to fabricate the set of tags, including the procurement of future replacements for missing or damaged asset tags.

2. Product Data: Provide asset tag manufacturer's product data for tag and attachment materials, including but not limited to the limitations of materials used, certifications of durability and weather resistance, and installation instructions.

3. Samples: Provide manufactured samples of each type and configuration of asset tag to be used. Samples shall have materials and content representative of the manufactured tags planned for use and installation on the assets. QR code on samples shall provide an active link to a URL location acceptable to the Owner so that the Owner may verify functionality of the QR code.

4. Photographs: Electronically submit photographs to verify all installed asset tags, documenting the tag's installed location on each asset and confirming the visual and functional accessibility of the information and QR code on the tag. Photographs shall be provided for each asset included on the ADIS and shall clearly identify the asset ID in the filename and submittal.

1.8 MEETINGS

A. Asset Management Pre-Construction Meeting: The Contractor shall meet with the Owner to review the Asset Information Management Plan and discuss the asset management requirements and expectations during construction. The Contractor shall anticipate requiring the attendance of designated asset management personnel, as well as key members of the Contractor's project team that will interface with asset management activities, including but not limited to the Project Manager and Site Supervisor (Superintendent).

B. Asset Management Progress Meetings: Contractor shall anticipate up to 3 progress meetings to be scheduled at the Owner's discretion between the Owner and the Contractor to review the progress of asset management activities and resolve any errors, omissions, or coordination issues. Required attendance shall include designated asset management personnel, as well as key members of the Contractor's project team that are responsible for interfacing with asset management activities as determined by the Owner, dependent upon the planned agenda.

C. Asset Management Completion Meeting: At all construction milestones in which asset ownership is transitioned to the Owner, and within 30 days of Substantial Completion, the Contractor shall meet with the Owner to review the current status of asset management activities and identify a list of open items and activities to be completed prior to acceptance of the assets. The Contractor shall anticipate requiring the attendance of designated asset management personnel, as well as key members of the Contractor's project team that have interfaced with asset management activities, including but not limited to the Project Manager, Site Supervisor (Superintendent), and additional staff as determined by the Owner.

1. Subsequent follow-up meetings to resolve any open items may be required, at the Owner's discretion, until asset management activities associated to the handover of the assets have been completed.

PART 2 – PRODUCTS

2.1 ASSET TAGS

A. Refer to the MBTA Asset Tagging Standard for asset tag material guidance.

    1. Asset tags shall be printed on a durable, ultraviolet and moisture resistant medium capable of withstanding the operating environment of the installed asset.

    2. Adhesives or fasteners used to affix tags to assets shall be compatible with tag medium and asset surface and have necessary durability to withstand the operating environment of the installed asset.

    3. Asset tag medium and attachment materials and methods shall not impair operation of or create safety hazards regarding the asset on which it is installed.

PART 3 – EXECUTION

3.1 ASSET TAG INSTALLATION

A. Asset tags shall be securely installed on assets in locations that are accessible to normal visual demands by maintenance and service personnel throughout the operation of the asset. Refer to the MBTA Asset Tagging Standard for detailed asset tagging location guidance.

B. Asset tagging activities for an asset shall be completed prior to the startup, testing, and in-service operation of the asset.

PART 4 – MEASUREMENT AND PAYMENT

4.1 MEASUREMENT

A. The work of this Section will not be measured but will be an allowance under Item No. 0222.031 ASSET MANAGEMENT ALLOWANCE.

4.2 PAYMENT

A. Payment for asset information delivery and asset tagging will be paid for under an allowance for Item No. 0222.031 ASSET MANAGEMENT ALLOWANCE.

4.3 PAYMENT ITEMS

ITEM NO.	DESCRIPTION	UNIT
0222.031	ASSET MANAGEMENT ALLOWANCE	AN

APPENDIX No. 1 ADIS SPREADSHEETS

1. **ADIS – Facilities** *[Note to Designer: Paste a public URL to a copy of the ADIS here, coordinate with Contract Services to include a copy on the FTP site, or delete line if not in scope]*
2. **ADIS – Power** *[Note to Designer: Paste a public URL to a copy of the ADIS here, coordinate with Contract Services to include a copy on the FTP site, or delete line if not in scope]*
3. **ADIS – Track** *[Note to Designer: Paste a public URL to a copy of the ADIS here, coordinate with Contract Services to include a copy on the FTP site, or delete line if not in scope]*
4. **ADIS – Signals** *[Note to Designer: Paste a public URL to a copy of the ADIS here, coordinate with Contract Services to include a copy on the FTP site, or delete line if not in scope]*
5. **ADIS – Structures** *[Note to Designer: Paste a public URL to a copy of the ADIS here, coordinate with Contract Services to include a copy on the FTP site, or delete line if not in scope]*

APPENDIX No. 2 MBTA ASSET TAGGING STANDARD

A. The following guide, Revision No. 2, dated May 17, 2023 may be subject to revision and guidelines

shall be coordinated with the MBTA.

[NOTE TO DESIGNER: INSERT ASSET TAGGING STANDARD PDF HERE AND DELETE THIS PAGE]

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END OF SECTION